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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/994,197
Filing Date: November 26, 2001
Appellant(s): REISINGER ET AL.

Kerry P. Sisselman
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 6, 2007 appealing from the Office action mailed December 6, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6384710	LeMense	5-2002
4523184	Abel	6-1985
6393071	Bourzeix	5-2002

6314125 Shanbhag 11-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

a) Claims 1,2,10-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over LeMense in view of Bourzeix.

Claims 1,11,12,13,16, 17, 20 and 21.

LeMense et al discloses a method and apparatus for carrying out simplex transmission of a data message modulating a carrier frequency in a radio access control system for a motor vehicle, comprising

wireless transmitting, in the radio access control system, to a receiver (18) in the motor vehicle (12), a data message containing an access code (see Fig.3) more than one time using at least two different carrier frequencies in temporal succession to increase immunity to interference, see col. 4, lines 16-63. Note that the frequencies are switched only within a predetermined channel comprising the two (or more) frequencies.

However, LeMense et al fails to teach changing the different frequencies by detuning, with at least one capacitor, an oscillating crystal of a carrier frequency generator. Instead, LeMense shows two different oscillators for transmitting the two different frequencies.

Referring to Fig. 2, Bourzeix teaches at least one capacitor (50) and an oscillating crystal or a detonable oscillator (44,48) to generate a plurality of frequencies, where switches are used to connect one of the capacitor to an oscillator. See col. 3, lines 1-10. This configuration is simpler than that use a plurality of oscillators for generating a plurality of carrier frequencies.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to use a bank of capacitors which is switchably coupled to an oscillator crystal, as taught by Bourzeix, to simply generate different carrier frequencies required in LeMense et al's radio acess control system.

The claimed invention further recites the receiver bandwidth in the range of +/- 300 ppm deviating from a nominal carrier frequency.

Abel teaches a receiver bandpass filter (71) tuned to a nominal transmission frequency and having a bandwidth of 10 MHz in order to accommodate transmission deviation of +/- 2.5 MHz. See col. 7, lines 64-68 and col.10, lines 60-63.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to provide the reception of the carrier frequencies with a receiver bandwidth in the range of a predetermined extent deviating from the normal carrier frequencies for the purpose of receiving transmission even if the carrier frequencies slightly deviates from the nominal frequencies with variations in element characteristics.

Claim 2.

LeMense teaching using a different carrier frequency for each of two transmissions, as explained above. The transmission of more than two would have been obvious to ensure the message is received since more transmission increases the chances the receiver receives the message when interference is present.

Regarding 10, LeMense et al discloses all the subject matter claimed but is silent on a tolerance range of carrier frequencies, it would have been obvious to one skilled in the art at the time the invention was made to set the tolerance of the carrier frequencies of LeMense et al

reasonably low, i.e., "not more than ± 10 %" because it is a well established engineering principle to have a low tolerance in order to provide stable carriers.

Regarding claims 14 and 18 further calling for the switch to be "a program-controlled switch," since the different frequencies should be generated regularly in LeMense et al's device for repeated transmission of a message, the switches of Bourzeix, once used in LeMense et al's device would have been programmed to select a different capacitor one at a time.

Regarding claims 15 and 19, LeMense et al teaches using a plurality of frequencies, as explained above, implying that a frequency selecting circuit, i.e., "a carrier frequency control device" as claimed, would have been connected to the bank of capacitors, as taught by Bourzeix, for the purpose of switching one of them to the oscillating crystal.

b) Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over LeMense in view of Bourzeix, Abel and Shanbhag.

Claims 3 and 6.

LeMense et al combination with Bourzeix discloses all the subject matter claimed except for "applying spreading to the data message by a predefined spread sequence." Shanbhag teaches that spreading data message is well known in the art for combining, transmitting and separation of message signals, i.e., an efficient utilization of frequencies without interference. Thus, it would have been obvious to one skilled in the art at the time the invention was made to apply a spreading code to the message of LeMense et al for the purpose of separating message signals without interference from other signals transmitted on the same frequencies.

Claims 4,5,7 and 8.

LeMense et al in combination with Bourzeix discloses all the subject matter claimed, as explained above in connection with claim 3, but is silent on specific carrier frequencies or data rates. Thus, it can not be ascertained whether or not the difference between the carrier frequencies is in an order of magnitude of a data rate of the data message as claimed in claim 4 or in a range between one quarter and two times a data rate of the data message as claimed in claim 5. However, since a selection of particular carrier frequencies and data rate of the data is a matter of design choice, it would have been obvious to one skilled in the art at the time the invention was made to select carrier frequencies and data rata that have the claimed relation between them particularly because applicant have failed to disclosed such relationship between carrier frequencies and data rate solves any stated problems or is for any particular purposes.

(10) Response to Argument

The claimed invention is drawn to a radio access control system where a data message is transmitted repeatedly over multiple different frequencies to increase immunity to interference. In the final Office action, this examiner shows that LeMense anticipated such a system. The claimed invention further includes a capacitor(s) and a detunable oscillator crystal to generate the multiple frequencies. Examiner also established that the use of capacitors and a detunable oscillator crystal in LeMense to generate multiple frequencies would have been obvious further in view of Bourzeix. The claimed invention further requires a receiver bandwidth in the range of +/- 300 ppm deviating from a nominal carrier frequency. Examiner cited Abel that teaches a receiver having a wider bandwidth than a carrier frequency in order to accommodate transmission deviation.

A. In response to argument that the prior art fails to teach or suggest "a receiver bandwidth in the range of +/- 300 ppm deviating from a nominal carrier frequency

Appellent traverses the rejection of the claims by arguing that Able fails to teach a receiver that has a bandwidth in the range of +/- 300 ppm, as recited in the claims. It is agreed that Abel does not exactly teach that specific range of tolerable frequency deviation. Applicant calculated the frequency deviation taught by Abel is 8000 ppm because the frequency deviation is +/- 2.5 MHz and the nominal center frequency is 314 MHz (i.e., 2.5/314=.008 = 8000 ppm.)

It is well settled that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this present case, the test is not whether the deviation range of 8000 ppm as used in Able may be bodily incorporated in the receiver of LeMense as modified by Bourzeix. What Able teaches or suggests is the benefit of a receiver bandwidth that can accommodate expected frequency deviation. Since the radio transmission environments of LeMense and Abel are not different, one for wireless security system and the other for remote control of car functions, one of ordinary skill in the art would not have applied the frequency deviation range of Able to the receiver of LeMense without modification. When one skilled in the art combined the teachings of the two prior art references, the claimed range of frequency deviation would have one of ranges arrived at depending on design criteria for remote control device of car functions, such as

power consumption, complexity and cost. Because the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

Applicant also disputes the examiner's statement that the claimed range of +/- 300 ppm would have been a matter of design choice and argues that examiner failed to give patentable weight to the limitation. In order to prevail on the criticality of a certain claimed range, one has to show unexpected result stemming from the claimed range over other ranges. The specification fails to teach any unexpected benefit using the claimed range of +/- 300 ppm. Abel clearly teaches the benefit of giving tolerance to the receiver bandwidth to accommodate transmission deviation.

B. In response to argument that the claimed invention is not obvious over the combination of prior art references.

Appellant argues that the receiver of LeMense would not have been able to use a conventional oscillator because a very large detuning range of about 5.88% of 58,000 ppm required in LeMense would exceed the capabilities of a conventional oscillator. However, appellant has failed to submit any evidence to support this argument. The unsupported argument is not sufficient to overcome the prima facie obviousness rejection of the claims including an oscillator crystal.

Appellant also argues that since Bourziex teaches detuning an oscillator crystal 35kHz around a carrier frequency of 13 MHz (i.e. 2700 ppm), the reference would have been combined into LeMense which would require 21.4 MHz around 363.8 MHz (i.e., 58,000 ppm). In other words, appellant, again, demands the bodily incorporating of the secondary reference into the

structure of the primary reference. As discussed above, that is not proper test of obviousness. One of ordinary skill in the art would have found a suitable oscillator crystal that meets the design criteria of LeMense. The rejection established the prima facie obviousness because it showed a prior art reference teaching the use of an oscillator crystal to generate a plurality of different frequencies, just as claimed.

Appellant now argues that there is no motivation to combine LeMense with other prior art reference because, according to appellant, the receiver disclosed Abel would need to be greatly modified to even work with the transmitter of LeMense. However, examiner did not suggest modifying the receiver of Abel to work with the transmitter of LeMense. Contrary, examiner proposed the modification of the LeMense receiver in view of Abel's teaching of receiver bandwidth tolerance. Modifying the receiver bandwith to accommodate transmission frequency deviation as taught by Abel in LeMense would certainly within the ordinary skill of one well versed in the art.

Lastly, appellant argues that a person of ordinary skill in the art would be led away from combing Abel and LeMense because Able requires a certain lock-on pulse to be generated at the beginning of each transmission from each transmitter, wherein such a lock-on pulse includes a sweep of the actual instantaneous oscillator frequency passing relatively slow through the nominal frequency to which the receiver is tuned, and LeMense nether teaches or suggests such a lock-on sweeping through a certain nominal frequency. This argument does not have merit at all because Abel was cited for its teaching of receiver bandwidth tolerance to accommodate the transmission frequency deviation and such a feature is not related to the generation of a certain lock-on pulse from the transmitter. Thus, whether LeMense nether teaches or suggests such a

lock-on sweeping through a certain nominal frequency at the transmitter is irrelevant to the question of whether its receiver would have been modified to allow the reception of slight frequency deviation of the carrier frequency.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Kevin Kim, Primary Examiner

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PRIMARY PATENT EXAMINER

Conferees:

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